

botanists. Schopf<sup>4</sup> has recently called attention to the desirability of continued compilation and publication of additions to the existing catalogs of American fossil plants.

Certain epithets are much more likely to be used independently for fossil and recent plants than others. Names derived from large geographical areas, such as Alaska and the States, are often repeated, but many fossils are named from a small locality where the types were collected or from the geological formation without risk of duplication. Epithets of obvious descriptive characters among certain species within a large genus containing both living and extinct species have a relatively high probability of being homonyms. Names suggesting resemblance to another species or indicating intermediate or uncertain characters may have been used before for fossils also.

As long as the number of homonyms among recent and fossil plants remains

<sup>4</sup> SCHOPF, JAMES M., *American Committee on Paleobotanical Nomenclature*. *Chronica Bot.* 7: 226-227. 1942.

rather small, the problem is not serious, and possibilities of confusion at present are slight. If the number of homonyms among the two groups should ever be greatly increased at some future date when many more species of fossils are known, possibly the same epithets could be permitted for both recent and fossil species. Most specialists do not work with both groups anyway. The greatest sources for error then would be in recent species found also as fossils in the geologically youngest deposits, such as Pleistocene. Identical names for plants and animals are permitted (art. 6), though the names repeated are mostly genera. Another possible solution would be to assign slightly different generic names to fossils that are closely related to living genera. Then the same specific epithets could be repeated in both. To some extent this practice has been followed by the use of suffixes, such as *-ites*, and *-oxylon*, and *-phyllum* in the examples *Pinites* from *Pinus*, *Araucarioxylon* from *Araucaria*, and *Sapindophyllum* from *Sapindus*.

BOTANY.—*New grasses from the Philippines and South India*.<sup>1</sup> JOSÉ VERA SANTOS, Botanical Gardens, University of Michigan. (Communicated by AGNES CHASE.)

During the progress of a study on the *Genera of Philippine grasses*, Asiatic specimens of *Garnotia*, *Isachne*, and *Sacciolepis* were found in the United States National Herbarium that were either without or with doubtful determinations. Among them is the material hitherto generally referred to *Garnotia stricta* Brongn.<sup>2</sup> At the suggestion of Mrs. Agnes Chase, studies were undertaken on the distinguishing characters of the true *Garnotia stricta* Brongn., and a comparison was made with the material formerly referred to this species. The result of this investigation led to the examination of the species of *Garnotia* and the description of a

new species. The writer is greatly indebted to Mrs. Chase, for her technical assistance in the preparation of this paper, and to Dr. Elzada U. Clover, for going over the manuscript.

***Garnotia mindanaensis* Santos, sp. nov.**

Perennis, 45-55 cm alta; culmi caespitosi, erecti, simplices, nodiis pubescentibus; vaginae glabrae, collari pubescenti et venis prominentibus; ligulae 0.2 mm longae, glabrae; laminae lineari-lanceolatae, planae, 8-25 cm longae, 4-6 mm latae; paniculae 10-18 cm longae, angustae interruptae; spiculae 4-4.5 mm longae, 0.5-0.6 mm latae, anguste lanceolatae, e dorso compressae; glumae subaequales, breviter aristatae, 3-nerves, scabrae; lemma maturum glumas aequans, lanceolatum, glabrum, 3-nerve; arista lemmate 1-2.5 plo longior; palea anguste lanceolata, membranacea, marginibus supra auriculas molliter pubescentibus; lodiculae 2, minutae, spatulatae, glabrae.

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<sup>2</sup> In DUPERRÉY, M. L. I., *Voyage autour du monde* 2<sup>e</sup>: 133-134, pl. 21. 1830.

Plants perennial, 45–55 cm tall; culms simple, tufted, erect or slightly geniculate toward the base, the nodes pubescent; sheaths glabrous, the collar pubescent, the veins prominent; ligules about 0.2 mm long, glabrous, the margin erose; blades linear-lanceolate, flat, 8–25 cm long, 4–6 mm wide, narrowed at the base, glabrous on both surfaces except for a few hairs toward the tip and the pubescence, sometimes with long hairs intermixed, above the ligule, the margins antorsely scabrous; panicles 10–18 cm long, narrow, interrupted, the branches loosely appressed; spikelets about 4–4.5 mm long, 0.5–0.6 mm wide, narrowly lanceolate, dorsally compressed, with short hairs at the base, in pairs, the members of each pair with short unequal pedicels; glumes subequal, both 3-nerved, the nerves scabrous, the middle one exerted into a short awn, the internerves glabrous; lemma at maturity equaling the glumes, lanceolate, glabrous, 3-nerved, the acute tip extending into an awn about 1–2.5 times as long as the lemma; palea narrowly lanceolate, membranaceous, enclosing a perfect flower, keeled on the back along the two lateral nerves, the margins auricled toward the base, softly pubescent from above the auricles to the tip; lodicules two, minute, spatulate, glabrous.

The type is in the herbarium of the University of Michigan, duplicate type in the U. S. National Herbarium, collected by H. H. Bartlett, no. 17235, December 6, 1940, grassland at Del Monte, Bukidnon, Mindanao Island, Philippines.

This species shows some resemblance to *Garnotia stricta* Brongn., the type species of the genus, and different collections have been referred to it. In view of this fact, a thorough study was made of the characteristics of the real *Garnotia stricta* Brongn. as proposed in 1830. Since the type specimen, which came from "Ile de Taiti," is not available, Brongniart's original description and the accompanying illustration showing the awnless lemma (pl. 21) are the only authentic bases for determining the identity of this species. The species here proposed differs from *Garnotia stricta* Brongn. in the absence of a rhizome, in the glabrous ligule, short-awned second glume, long-awned lemma, soft pubescence of the margin of the palea from above the auricles to the tip, and in the glabrous lodicules.

### *Sacciolepis glabra* Santos, sp. nov.

Annual, 40–55 cm alta; culmi graciles, erecti vel decumbentes, nodiis inferioribus radicanter; vaginae glabrae; ligulae membranaceae, 0.5 mm longae, marginibus pilosis; laminae lineares 5–12 cm longae, 3–5 mm latae, supra sparse papilloso-pilosae, marginibus scaberulis; paniculae maturae contractae, spiciformes, cylindricae, ca 2–5 cm longae, 7 mm latae; spiculae 3–4 mm longae, glabrae, a latere compressae, oblongo-lanceolatae; gluma prima quam spicula ca 3 plo brevior, subacuta, 3–5-nervis, marginibus hyalinis; gluma secunda et lemma vacuum aequalia, 11-nervia, illa gibbosa hoc basi saccatum; palea sterilis reducta; lemma fertile quam spicula ca 2 plo brevius, lanceolato-ellipticum; palea lemma aequans, utraque obscure nervosa; granum oblongo-ellipticum, subfuscum.

Plants annual, 40–55 cm tall; culms glabrous, slender, branched, erect to decumbent, rooting at the lower nodes; sheaths glabrous, slightly compressed; ligules membranous, 0.5 mm long, the margin pilose; blades linear, the tips acute, 5–12 cm long, 3–5 mm wide, the upper ones much longer than the lower, the upper surface sparsely papillose-pilose, the margins scaberulous; mature panicles contracted, spike-like, cylindric, about 2.5 cm long, 7 mm wide; spikelets 3–4 mm long, glabrous, crowded, solitary to subfascicled, laterally compressed, oblong-lanceolate in dorsal view; first glume about  $\frac{1}{3}$  as long as the spikelet, subacute, 3- to 5-nerved, the margin hyaline; second glume and empty lemma equal, both 11-nerved, the glume strongly gibbose below, the lemma more or less straight for the greater part of its length except for the saccate base; sterile palea reduced; fertile lemma about one-half as long as the spikelet, lanceolate-elliptic, pale, shining, the tip acute; palea as long as the lemma, both obscurely nerved, chartaceous-indurate; grain light brown, oblong-elliptic.

The type is in the herbarium of the University of Michigan, duplicate type in the U. S. National Herbarium, collected by L. E. Eballo, no. 174, October 26–30, 1939, at Wawan and Dimaraga Mountains, Mansalay, Island of Mindoro, Philippines.

This species shows some relation to two Asiatic grasses, *Sacciolepis contracta* (Wight &



Fig. 1.—*Garnotia mindanaensis*: Habit sketch of the flowering plant,  $\times \frac{1}{2}$ . a, Side view of the spikelet; b, first glume; c, second glume; d, fertile lemma; e, palea with the bisexual flower. a-e,  $\times 10$ . (Type.)





Fig. 2.—*Sacciolepis glabra*: Habit sketch of the flowering plant,  $\times \frac{1}{2}$ . *a* and *b*, Side and dorsal views of the spikelet, respectively; *c*, fertile lemma; *d*, grain. *a-d*,  $\times 10$ . (Type.)



Fig. 3.—*Isachne lutaria*: Habit sketch of the flowering plant,  $\times \frac{1}{2}$ . *a* and *b*, Side and dorsal views of the spikelet, respectively; *c*, side view of the lower and upper lemmas; *d*, ventral view of the upper lemma; *e*, palea of the upper lemma enclosing the pistil, filaments, and lodicules; *f*, grain. *a-f*,  $\times 10$ . (Type.)

Arn.) Hitchc.<sup>3</sup> and *S. indica* (L.) Chase.<sup>4</sup> It differs from both in having much larger, glabrous spikelets; from *S. contracta* in its annual character, the decumbent culms, rooting at the lower nodes, the lax, sparsely pubescent blades, and shorter panicles; and from *S. indica* in its much taller habit and in the panicles, which are more than twice as long.

*Isachne lutaria* Santos, sp. nov.

Annual, ca. 30 cm alta; culmi graciles, adscendentes, ramosi, nodiis pubescentibus vel pilosis, eis inferioribus radicantibus; vaginae glabrae vel marginibus ciliatae; ligulae ciliatae pilis longis albidis; laminae lanceolatae, 2-4 cm longae, 3-5 mm latae, venis et marginibus scaberulis; paniculae ovatae, 3-5 cm longae, 2.5-4 cm latae, ramis flexuosis non glandulosis; spiculae elliptico-oblongae, 1.5-1.7 mm longae, 1-1.2 mm latae; glumae subaequales spiculum subaequant, 9-nerves, late obtusae, sparse hispidae; lemma floris masculi spiculum subaequans, membranaceum, obscure 5-nerve; lemma fertile quam spicula clare brevius, chartaceum, breviter stipitatum, obscure 5-nerve, dorso et marginibus tenuiter pubescens; palea quam lemma paulo brevior, glabra; granum orbicularo-oblongum.

Plants annual, about 30 cm tall; culms ascending, slender, branched, rooting at the lower nodes, slightly compressed, the internodes glabrous, the nodes pubescent to pilose; sheaths loose, shorter than the internodes, glabrous or the margins ciliate, the cilia gradually increasing in length toward the pilose upper portion and continuous with the fringe of long, white hairs which form the ligule; blades lanceolate, 2-4 cm long, 3-5 mm wide, the veins and margins scaberulous, the auricles papillose-pilose; panicles ovate, 3-5 cm long, 2.5-4 cm wide, the branches spreading, flexuous, nonglandular;

spikelets elliptic-oblong, 1.5-1.7 mm long, 1-1.2 mm wide, greenish to purplish; glumes subequal, about as long as the spikelet, both 9-nerved, broadly obtuse, sparsely hispidulous, the second more prominently convex than the first; staminate lemma about as long as the spikelet, obscurely 5-nerved, membranous, its palea of the same length and texture, obscurely 2-nerved; fertile lemma distinctly shorter than the spikelet, chartaceous, short-stipitate, elliptic to elliptic-obovate, plano-convex, 5-nerved, finely pubescent on the back and margin; palea slightly shorter than the lemma, ovate to elliptic-ovate, glabrous, enclosing a perfect flower; grain brown, orbicular-oblong.

The type is in the herbarium of the University of Michigan, fragment of type in the U. S. National Herbarium, collected by E. W. Erlanson, no. 5190, January 8, 1934, at the edge of a paddy field, Trivandrum, Travancore, South India.

The specific epithet refers to the muddy habitat of this grass.

While the characters of this species agree in many respects with those of *Isachne globosa* (Thunb.) O. Kuntze,<sup>5</sup> it is distinguished from the latter by the smaller spikelets, sparsely hispidulous glumes, and the short-pubescent back of the upper lemma. *Isachne globosa* (Thunb.) O. Kuntze is based on *Milium globosum* Thunberg.<sup>6</sup> Lasègue<sup>7</sup> states that Thunberg's specimens are in Stockholm, Sweden, which indicates that the type is probably in the famous herbarium of the Naturhistoriska Riksmuseet. Since present world conditions make the type inaccessible for examination, the determination of the Thunberg species is based on his original description and the topotype collected by Hisauti (U. S. National Herbarium no. 1162864), July 1921, at Yokohama, Japan.

<sup>5</sup> *Revisio genera plantarum* 2: 778. 1891.

<sup>6</sup> *Flora Japonica* 49. 1784.

<sup>7</sup> *Musée botanique de A. Benjamin Delessert* 344. 1845.

<sup>3</sup> Mem. B. P. Bishop Mus. 8: 199, fig. 90. 1922.

<sup>4</sup> Proc. Biol. Soc. Washington 21: 8. 1908.